

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Honeywell Case No. H0005049-5863
(MBHB Ref. No. 06-302)

In the Application of:)	
)	
Cheisan J. Yue and James D. Seefeldt)	
)	Examiner: Monica Lewis
Serial No.: 10/811,207)	
)	
Filing Date: March 26, 2004)	Group Art Unit: 2822
)	
For: Techniques to Reduce Substrate Cross)	
Talk on Mixed Signal and RF Circuit)	Confirmation No.: 1964
Design)	

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF

Dear Sir:

Applicants respectfully request review of the Final Rejection mailed January 15, 2008 because the Examiner has clearly erred in rejecting the claims under 35 U.S.C. § 103(a).

A. Status of the Claims

Claims 1-19 are pending. Claim 1 is independent, and claims 2-19 depend from claim 1. Claim 1 stands finally rejected under § 103(a) as being unpatentable over the combination of Librizzi and Clevenger.

B. The Examiner Clearly Erred in Rejecting the Claims under § 103(a)

Applicants submit that the rejection is improper for at least the reasons that: (1) the Examiner has not shown a motivation to combine Librizzi and Clevenger; (2) there is no

motivation to combine Librizzi and Clevenger; and (3) Librizzi and Clevenger, whether taken either individually or in combination, do not teach or suggest each and every recited claim element.

1. Examiner Has Not Shown A Motivation To Combine Librizzi And Clevenger

First, while Applicants acknowledge that “obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so,” MPEP § 2143.01, Applicants submit that the Examiner has failed to point out any “teaching, suggestion, or motivation” to combine the references. In particular, the Examiner stated that “[i]t would have been obvious...to modify the semiconductor of Librizzi to include a guard ring that extends through the buried insulation layer contacting the semiconductor substrate as disclosed in Clevenger because it aids in providing a conduction path.” (Final Rejection, p. 3.) The fatal flaw in the Examiner’s reasoning is that Clevenger’s thermal conduction path 210 has “low electrical conductivity.” (Clevenger, col. 2, lines 63-65.) Indeed, Clevenger states that the path 210 is preferably “fabricated of diamond or diamond-like materials...[because] diamond has a high thermal conductivity...and is an electrical insulator.” (Clevenger, col. 4, lines 9-14.) Therefore, contrary to the Examiner’s assertion, it would be wholly illogical to modify the Librizzi semiconductor with Clevenger’s thermal conduction path 210 for the Examiner’s stated reason of “providing a conduction path.”

2. There Is No Motivation To Combine Librizzi And Clevenger

One skilled in the art would not be motivated to combine the teaching Librizzi with that of Clevenger because the Examiner’s “proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose.” MPEP 2143.01 (V). In particular, Librizzi states that “[t]he low resistivity guard ring regions 36 and 38 provide an

excellent RF ground shunt.” (Librizzi, col. 6, lines 6-7.) In contrast, Clevenger’s thermal conduction path 210 has “low electrical conductivity” and is preferably “an electrical insulator.” (Clevenger, col. 2, lines 64-65; col. 4, line 13.) One skilled in the art would not be motivated to modify Librizzi with Clevenger’s thermal conduction path 210 as asserted by the Examiner because Clevenger’s thermal conduction path 210 has “low electrical conductivity” and is preferably “an electrical insulator,” and thus, Clevenger’s thermal conduction path 210 would not be an “excellent RF ground shunt.” Therefore, the Examiner’s proposed modification of Librizzi with Clevenger would render Librizzi’s disclosed semiconductor unsatisfactory for its intended purpose and thus, Applicants submit that under MPEP § 2143.01, there is no motivation to combine the teachings of Librizzi with Clevenger.

3. Librizzi And Clevenger, Whether Taken Individually Or In Combination, Do Not Teach Or Suggest Each And Every Recited Claim Element

“To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” MPEP § 2143.03 (emphasis added). In this case, the references do not teach or suggest all of the claim limitations, and thus, *prima facie* obviousness has not been established because Librizzi and Clevenger, whether taken individually or in combination, do not teach or suggest “a guard ring...[that] extends through the buried insulation layer contacting the semiconductor substrate, and...arranged to provide RF isolation for the semiconductor mesa,” as recited in independent claim 1.

First, Librizzi does not teach or suggest “a guard ring” having the recited attributes. Indeed, the Examiner acknowledged, and Applicants agree, that Librizzi’s disclosed guard ring does not extend through the buried insulation layer contacting the semiconductor substrate. (Final Rejection, p. 2.) Therefore, Librizzi fails to teach or suggest “a guard ring...[that] extends

through the buried insulation layer contacting the semiconductor substrate, and...arranged to provide RF isolation for the semiconductor mesa,” as recited in independent claim 1.

The addition of Clevenger does not overcome the deficiencies of Librizzi. In particular, Clevenger teaches a thermal conduction path 210 that extends to the underlying silicon substrate 201, but Clevenger’s thermal conduction path 210 cannot “provide RF isolation for the semiconductor mesa” because, in contrast to Applicants’ claimed “guard ring,” Clevenger’s “thermal conduction path...has low electrical conductivity.” (Clevenger, col. 2, lines 63-65.) Therefore, Clevenger, like Librizzi, fails to teach or suggest “a guard ring...[that] extends through the buried insulation layer contacting the semiconductor substrate, and...arranged to provide RF isolation for the semiconductor mesa,” as recited in independent claim 1.

In responding to Applicants’ arguments presented in the Response mailed November 1, 2007 regarding this issue, the Examiner stated that “Clevenger is not being utilized to disclose a guard ring that is arranged to provide RF isolation for the semiconductor mesa.” (Final Rejection, p. 9.) Applicants agree that Clevenger’s thermal conduction path 210 cited by the Examiner does not provide RF isolation for the semiconductor mesa. However, Applicants respectfully point out that the claimed “guard ring” has two distinct attributes: (1) it “extends through the buried insulation layer contacting the semiconductor substrate”; and (2) it is “arranged to provide RF isolation for the semiconductor mesa.” Librizzi’s guard ring and Clevenger’s thermal conduction path 210 are not combinable to teach or suggest Applicants’ claimed “guard ring” because Librizzi’s guard ring and Clevenger’s thermal conduction path are completely different structures (RF guard ring vs. thermal conduction path), made of completely different materials (electrical conductor vs. electrical insulator), and are used for completely different purposes (conducting electricity vs. conducting heat). Therefore, Librizzi’s guard ring

and Clevenger's thermal conduction path not compatible or interchangeable in any way to teach or suggest Applicants' claimed "guard ring," as similarly set forth in Sections B-1 and B-2, *supra*.

Because Librizzi and Clevenger, whether taken individually or in combination, do not teach or suggest "a guard ring...[that] extends through the buried insulation layer contacting the semiconductor substrate, and...arranged to provide RF isolation for the semiconductor mesa," Applicants submit that claim 1 is non-obvious and thus allowable over Librizzi and Clevenger. Moreover, because claims 2-19 depend from claim 1, Applicants further submit that claims 2-19 are allowable for at least the reason that they depend from an allowable claim.

C. Conclusion

In view of the foregoing, Applicants submit that the rejection under § 103(a) is clearly erroneous, and that the pending claims are non-obvious under § 103(a) in view of the cited references. Accordingly, Applicants respectfully request that the Office withdraw the rejection, and issue a Notice of Allowance.

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: March 17, 2008

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